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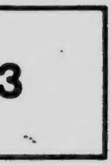

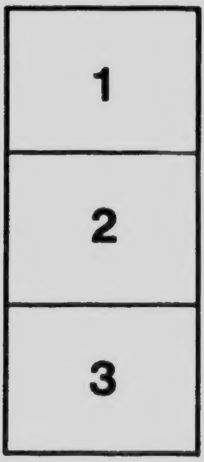

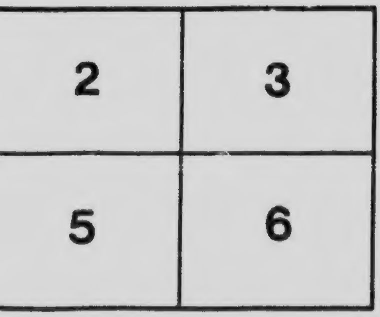

EXHIBITION CIRCULAR NO. 49.
(June, 1915)

DOMINION OF CANADA
DEPARTMENT OF AGRICULTURE

EXPERIMENTAL FARMS.

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Experimental Station
—for—
Central Alberta.

HOW RIPENING OF GRAIN CROPS MAY BE HASTENED,

—by—

G. H. HUTTON.

The question as to how the ripening of grain crops may be hastened is an important one in Central Alberta. Frequently yields are reduced and the quality of grain injured in many fields where had the grain ripened a few days earlier both quality and yield would have been such as to leave little to be desired. It is quite often the case that the heaviest crop is rather slow in ripening.

THE QUESTION OF VARIETIES.

Much has been accomplished by the introduction of improved and earlier varieties toward realizing the ideal of a safe, early, heavy-yielding high-quality sort in each class of the cereals. The varieties named below are suitable for Central Alberta conditions.

WHEAT: Best Varieties: MARQUIS, PRELUDE

Prelude wheat yields about ten bushels less to the acre than Marquis, but ripens fully ten days earlier.

OATS: Best Varieties: BANNER, ABUNDANCE, LIGOWO

Banner is not an early variety, but a good yielder, and produces a very leafy straw of high feeding value.

BARLEY: Best Varieties: MANCHURIAN, O. A. C. No. 21.

The above are six-rowed varieties. The six-rowed sorts yield heavier than the two-rowed sorts, are shorter in the straw and ripen earlier.

PEAS: Best Variety: ARTHUR.

SELECTION OF VARIETIES.

After having carefully selected the varieties it is intended to grow on the farm, the next question to arise is as to the method or methods to be adopted to hasten the date of maturity of the variety selected.

QUANTITIES OF SEED PER ACRE INFLUENCE DATES OF MATURITY.

We have found that by increasing the quantity of seed used per acre that ripening is hastened and that up to a certain point such shortening of the period required to produce mature grain has not reduced the yield. The amount of moisture present in the soil at seed time may usually be taken as the governing factor in determining the amount of seed of any given variety to be sown to the acre. A well worked summer fallow will usually sustain a much larger number of plants per acre than will similar land that has been in grain the year before. Another point worth considering is that a soil retentive of moisture will usually stand heavier seeding for maximum yields than a less retentive soil. This latter statement has a particular bearing in determining rates of seeding to the acre in Central Alberta, having in mind the varieties of soil between say the district about the City of Red Deer and one hundred and twenty-five miles east of that city.

WHEAT.

QUANTITY OF SEED PER ACRE ON WELL WORKED SUMMER FALLOW.

The following excerpt is taken from the report of this Station for the year ending March 31st, 1910:

Variety	Bushels of seed per acre	No. of days Maturing	Length of Straw including Head	Character of Straw	Length of Head	Weight of Straw	Yield per acre	
Chelsea			Inches		Inches	Lbs.	Bush.,	Lbs.
"	¾	142	57	Stiff	4½	6,375	28	39¼
"	1¼	140	55	"	4	6,225	29	11¼
"	1¾	138	55	"	3¾	5,970	29	26¼
"	2¼	138	54	"	3¼	6,675	36	50½
"	2¾	136	52	"	3¼	6,255	33	46¾

Dealing with the same subject in 1911, the report reads:

"The crops obtained in the experiments with different quantities of seed per acre "have resulted in this instance in favour of the heavier seeding, not only with wheat, "but with oats and barley as well. The results of the past season support those of "previous years and are in opposition to the theories advanced by a number of dry-"farming experts in the western states. This work has now been conducted for more "than one season, and the results are so uniformly in favor of what might be con-"sidered heavy sowing, that we are forced to the conclusion that conditions in the "Province are so different as to warrant our farmers in following the advice of the "light seeding advocates with extreme caution. It would be safer to use fairly liberal "quantities of seed until proof has been given by a limited experiment on individual "farms that lighter seeding will give better results. The uniformity of the results in "favor of the heavier seeding indicates that, for this soil, it will pay to be generous in "the use of seed."

Variety	Bush. Seed per Acre	No. of Days Maturing	Length of Straw including Head	Length of Straw on a Scale of 10 Points	Weight of Straw	Yield per Acre	
	Bush.		Inches		Lbs.	Bush.	Lbs.
Marquis	¾	156	47	10	5,670	45	30
"	1¼	148	47	10	5,645	49	54
"	1¾	149	49	10	5,769	58	50
"	2¼	145	50	10	5,872	62	7
"	2¾	144	47	10	6,018	63	41

OATS.

The following table is indicative of the general results secured during a number of years. This test was first reported in 1909:

Name of Variety	Bush. per Acre	Date of Ripening	Days Maturing	Length of Straw	Character of Straw	Length of Head	Weight of Straw	Yield per Acre	
				Inches		Inches	Lbs.	Bush.	Lbs.
Thousand Dollar	1	Aug. 13	122	41	Medium	7.6	2820	42	12
" "	1½	" 17	121	42	"	7	3240	44	4
" "	2	" 16	120	40	"	7.4	3000	49	14
" "	2½	" 15	119	38	"	7.4	3000	52	32
" "	3	" 14	118	37	"	7	3060	51	6
" "	3½	" 14	118	39	"	6	3720	60	...
" "	4	" 13	117	36	"	6	3000	58	8
Runner	1	" 25	129	46	"	9.75	2480	56	16
"	1½	" 21	125	45	"	10	4080	67	2
"	2	" 23	127	42	"	9.5	3720	68	28
"	2½	" 22	126	41	"	9	3840	75	30
"	3	" 16	120	40	"	8	3900	79	14
"	3½	" 14	118	39	"	7	3780	72	12
"	4	" 13	117	35½	"	8	3000	56	16

These experiments to determine the best quantity of seed per acre with oats have been conducted for several years. The conclusion reached is summed up as follows in the report for 1912:

"Tests have been made for a sufficient length of time with varying quantities of "seed per acre to warrant the statement that for oats in Central Alberta from three "to three and one-half bushels of seed per acre are likely to give the best results on "well worked soils similar to that at this Station. Along the eastern boundary of the "province where there is not such a large amount of humus in the soil, nor such a "great depth of surface soil, less seed than the amounts named may be found to give "the best results."

The same statement may be made in connection with barley. Although when considering the fact that barley is usually seeded on stubble, less seed is advocated than is shown as having given the best results on summer fallow. When sown on stubble and used as a nurse crop we sow from two to two and one-half bushels of well cleaned seed per acre:

Variety	Quantity of Seed	Date Ripened	No. of Days Maturing	Length of Straw	Length of Straw on a Scale of 10 Points	Length of Head	Weight of Straw	Yield per Acre	
	Bush			Inches		Inches	Lbs.	Bush.	Lbs.
Mensury	1	Aug. 8	128	47	9	5	4,260	77	24
"	1½	" 18	128	46	8½	4½	5,625	81	27
"	2	" 14	124	45	8	4	5,610	83	6
"	2½	" 13	123	46	8	4	5,535	83	21
"	3	" 9	119	44	8	3¾	5,520	88	36
Invincible	1	" 31	141	43	10	4½	5,415	48	21
"	1½	" 29	139	40	10	4¼	6,285	61	27
"	2	" 22	132	44	10	4	5,985	64	3
"	2½	" 22	132	45	9	3¾	7,140	81	12
"	3	" 18	128	50	7½	3½	6,450	80	30

INFLUENCE OF SOD IN HASTENING MATURITY.

All cereals sown on sod which has been broken and well worked down previous to July or August will ripen earlier than if a full summer fallow has been given, and earlier than if sown on corn or rootground.

BARLEY ON SOD.

Variety	Date Sown	Date Cut	Days Maturing	Yield per Acre
Preston	April 10	August 21	133	39 Bush .. Lbs.
Stanley	April 10	August 21	133	33 Bush 30 Lbs.

BARLEY ON CORN AND ROOT LAND OF 1907.

Variety	Date Sown	Date Cut	Days Maturing	Yield per Acre
Preston	April 11	August 28	139	30 Bush. 17 Lbs.
Stanley	April 11	August 28	139	27 Bush. 19 Lbs.

Maturity is shown from above results to be materially hastened:—

1. By increasing the quantities of seed used.
   Note: Such increase in quantity of seed sown is not attended by decreased yields up to a certain point.

2. Where it is desired to grow wheat on soil that usually produces a crop of wheat tardy in ripening, maturity may be hastened by so planning the rotation as to seed the wheat on sod which has been plowed and worked down the previous July or August.